PAN AMERICAN fisherman

ESTABLISHED 1947

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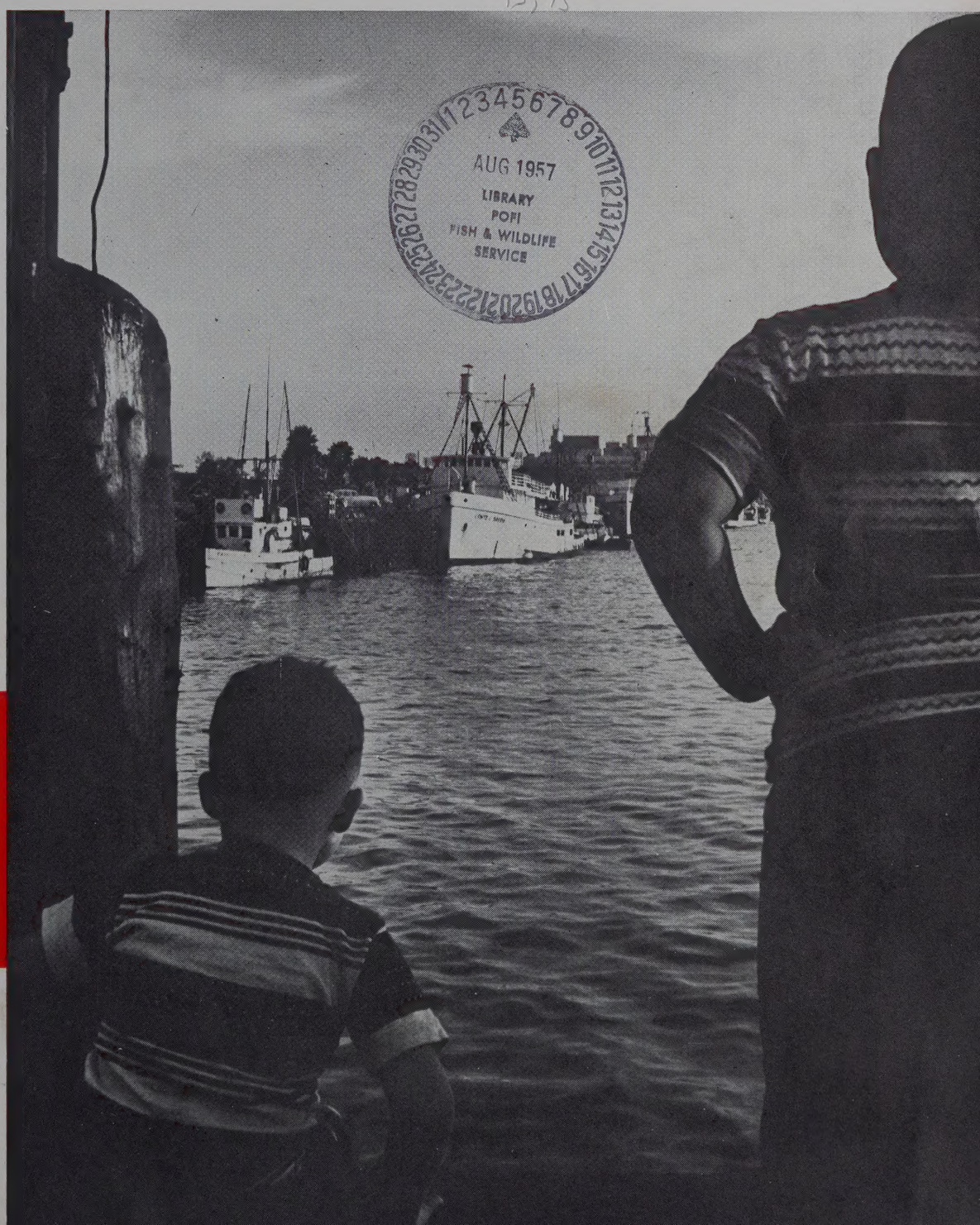

July 1957

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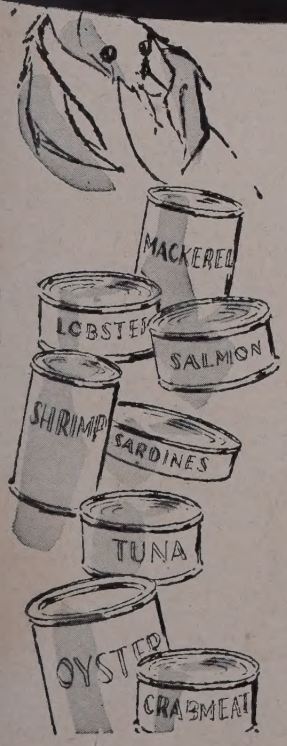

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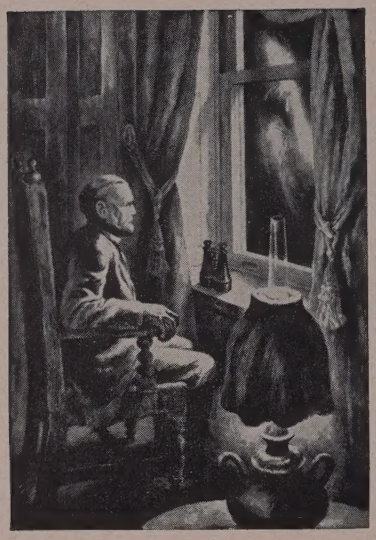
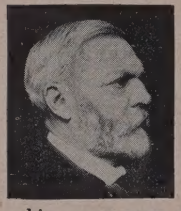


The man who wouldn't give up



500 MASSED ROCKETS shook Brooklyn Bridge, screamed up into the May evening and showered the city with red and gold.

While behind a darkened window, a big, gaunt man sat and watched, too crippled and painwracked to attend the opening day festivities for the bridge.

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STATE OR FEDERAL CONTROL?

The Marginal Seas

By EDWARD W. ALLEN

MAY Congress, in enacting an enabling act for the admission of the Territory of Alaska as a sister State in the Union, withhold, either temporarily or permanently, control over migratory fish in the marginal sea of the new state?

The question involves the assertion by some people that new states must be admitted upon an "equal footing" with existing states. The United States constitution provision is that "New States may be admitted by the Congress into the Union . . ." It goes on briefly to prohibit carving up a state without its consent or forcing states to join.

There is nothing in this language about "equal footing." This is a matter of judicial construction, probably basically sound, but subject to reconciliation with other features of our governmental structure. It does not interfere with the Federal Government exercising its own unrestricted power differently in different states, nor does it apply to Federal proprietorship.

Furthermore the Federal Government has latent powers so that while it may permit a state to exercise jurisdiction in a particular field, this jurisdiction can be superceded when the Federal Government sees fit to act.

Under numerous decisions it has been pointed out that the Federal Government has such latent powers with reference to the marginal sea . . . it has been made clear that because of the proprietory rights of the Federal Government as well as its sovereign power, "equal footing" is not involved.

It should be noted that in almost every case, both before as well as since the basic one known as "the California case," the Supreme Court when it sustained any state control within the marginal sea carefully guarded itself by pointing out that this was in the absence of the Federal Government having exercised control. The clear inference is that the Federal Government has the right and power to assume control and thereby exclude the state when conditions warrant this.

It should also be noted that this Federal power is sustained upon two principles: (1) that the "State is not equipped in our constitutional system with the powers or the facilities for exercising the responsibilities which it seeks;" and (2) "this incident is a property right and Congress has unlimited power to dispose of it."

As a property right there can be no possible application of the "equal footing" concept. Hence Congress could grant Texas 12 miles and California three, and enabling acts differ with reference to public and Indian lands.

On the responsibility side there is strong, logical and current reason for considering Alaskan ocean fisheries on their own distinctive merits. A special situation is presented. Alaska is not only in the most critical location from a security standpoint by its proximity to Asia, but the research being conducted by the International North Pacific Fisheries Commission indicates a commingling of Asian and Alaskan fish.

These fish migrate between the marginal sea and the high seas. Their management to be most effective should be by that branch of government competent both to handle the entire situation and vested with the jurisdiction over international affairs.

Scientists Watch I.G.Y.

During the International Geophysical Year, which began July 1, scientists of the Department of Commerce will seek answers to many questions, particularly about what goes on in the 93 million miles between the earth's surface and the sun.

Is the world getting gradually warmer because the proportion of carbon dioxide in the air is increasing? Are there electric streams high above the earth similar to the jet streams that aviators encounter in the lower atmosphere? And what shape do they take? What can be learned from the "whistlers" and the froglike "dawn chorus" in radios? Can television and F.M. (frequency modulation) broadcasts be bounced off a lofty layer of electrified air to distant points? Just how do sunspots and their opposites, solar flares, affect magnetic storms, cosmic rays and the aurora?

The United States National Committee for the I.G.Y., which was organized by the National Academy of Sciences, will look to various scientific bureaus of the Department of Commerce for substantial contributions on earth science subjects.

Antibiotics for Fish?

Questions on the possible prospects for the use of antibiotics on fish in the United States have been frequent in the past few months. The studies of the usefulness of antibiotics on fish have not all shown equally dramatic results. However, the bulk of research data seems to demonstrate adequately that certain antibiotics are useful, under certain conditions, in extending the storage life of fresh, unfrozen fish.

This proof of the usefulness of antibiotics is only the first step towards securing official approval. The second step, proving that antibiotics can be used safely on fish, is more difficult. Before the Food and Drug Administration will permit an antibiotic to be used and establish a tolerance for it on a fishery product, there must be incontrovertible proof that normal cooking would completel destroy the antibiotic, or that residues remaining after cooking would be so small as to be perfectly harmless.

A mass of research data must support the assertion that the use of antibiotics would be perfectly safe. We understand that the antiobiotic manufacturers are now reviewing their research studies with the F.&D.A.

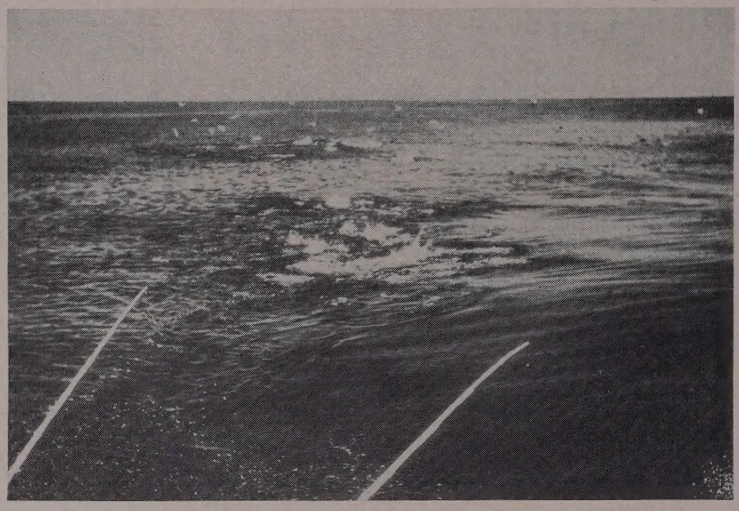

Figure 1—Tuna school at stern of M. V. Charles H. Gilbert.

U. S. FISH AND WILDLIFE SERVICE

Task Force in the Marquesas

By ROBERT C. WILSON and THOMAS S. AUSTIN

THE Pacific Oceanic Fishery Investigations (POFI) of the U.S. Fish and Wildlife Service recently used the "task force" approach in an effort to evaluate the tuna resources of the south central Pacific.

Multiple-vessel cruises were made to the region of the Marquesas Islands to obtain answers to questions concerning the availability of both surface and deep-swimming tunas, their distribution, and their relationship to their environment, the ocean. Although these cruises were primarily of exploratory nature, they produced information which affords definite conclusions of immediate interest.

The Marquesas are the most northeasterly of the islands of French Oceania. They lie about 330 miles farther from Southern California than do the Galapagos Islands (see fig. 2). This fact has, in recent years, stimulated an interest in the possible development of tuna fishing grounds in the Marquesan area by the long-range segment of the tuna clipper fleet. Such an interest is a logical development. In fact, in 1955 the M.V. *Paramount*, a San Diego-based tuna clipper, spent two weeks scouting the Marquesas group; tuna schools were reported as numerous, but the fish did not bite well.

In planning the Marquesan surveys, two periods, the southern hemisphere winter and the southern hemisphere summer, were selected in order to afford the greatest contrast in environmental conditions, and possibly in tuna abundance. A two-vessel task force was formed for the winter survey (August - September, 1956), and a three-vessel force for the survey during the Marquesan summer (January-March, 1957). The specific vessel assignments and the missions of these vessels were:

Winter: *Hugh M. Smith*—Oceanography and productivity

Charles H. Gilbert—Live-bait and longline fishing

Summer: *Hugh M. Smith*—Oceanography and productivity

Charles H. Gilbert—Live-bait fishing

John R. Manning—Longline fishing

Both of these surveys were completed; the survey area is shown in figure 3. The results of these efforts are in part summarized by the following series of questions and answers:

Q. Were there many tuna around the Marquesas, and was there a seasonal variation in their availability?

A. Skipjack were plentiful in the Marquesas during the summer months. More than three times as many schools were seen during the summer cruise as during the winter. A total of three scouting surveys were made, each following the track covering the immediate vicinity of the Marquesas group, as shown in figure 4. Results of these surveys may be summarized as follows:

Time	Total	Schools sighted Skipjack	Yellowfin	Mixed	Unidentified[1]
Mid-Sepember	26	5	—	—	21
Late January	80	40	4	4	32
Late February	89	21	7	—	61

[1] "Unidentified" schools are those where tuna were seen, but not identified as to species.

Mr. Wilson is Fishery Research Biologist, and Mr. Austin is Oceonographer, Pacific Oceanic Fishery Investigations, U.S. Fish and Wildlife Service, Honolulu, T. H.

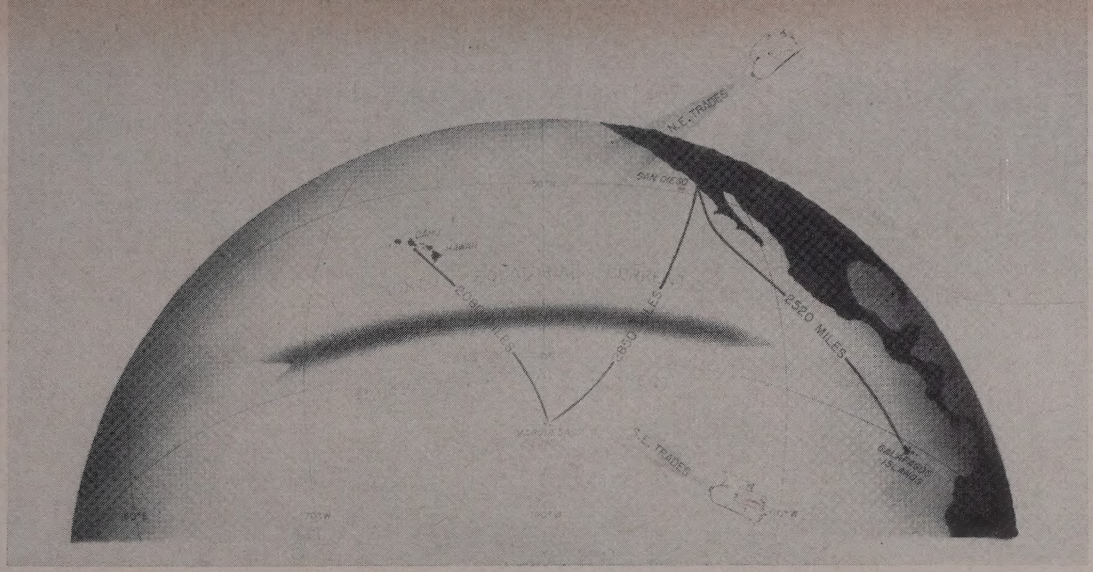

Figure 2—Distances to the Marquesas Islands.

More Questions and Answers

Q. How did the fish behave?

A. In general, the schools were wild and fast-moving. Most of the identified schools were skipjack. Typically, the skipjack schools were continually changing — segments of schools breaking off from the main body, rejoining, etc. Virtually all of the fish in schools identified as yellowfin were large, from 50 to 100 pounds in weight, and these schools were also fast-traveling.

Q. Did the tuna bite well?

A. No. During the summer cruise, 99 trials were made with live-bait on tuna schools. Fish from 36 schools responded to the point where a catch of one or more tuna was made, whereas a catch of 100 or more was made from only 12 schools. The results may be summarized as follows:

School composition	Number of trials	Catch 1 or more tuna	100 or more tuna	250 or more tuna	500 or more tuna
Skipjack	68	29	12	7	3
Yellowfin	18	2	0	0	0
Unidentified	7	0	0	0	0
Mixed, YF-SJ	5	4	0	0	0
Little tunny	1	1	0	0	0

It should be pointed out here that the catches of tuna in the table above cannot be translated into performance by a tuna clipper, because the POFI vessel was at times catching fish at a slow rate for tagging with a reduced number of men in the racks. Also, the need for covering the entire area during the visual scouting surveys did not permit fishing each school fully. Tuna bit at an equally slow rate during the winter cruise.

Q. What was the size of the tuna caught?

A: Of the total catch of 4,838 skipjack during the summer cruise, 90% were 9 pounds or under in weight, with most of the fish weighing about 6 pounds. Of the remaining 10% of larger skipjack, those weighing about 16 pounds occurred most frequently. During the winter cruise the predominant weight was 5 pounds. The yellowfin caught from schools mixed with skipjack weighed 5-6 pounds, while yellowfin from "pure" schools weighed 50-100 pounds.

Q. How many tuna were tagged?

A. We tagged 797 skipjack and 10 yellowfin using the new POFI dart tag.

Q. Is there any bait around the Marquesas?

A. Yes. There is the Marquesan sardine, which is similar in appearance to flatiron herring of Lower

(Continued on page 14)

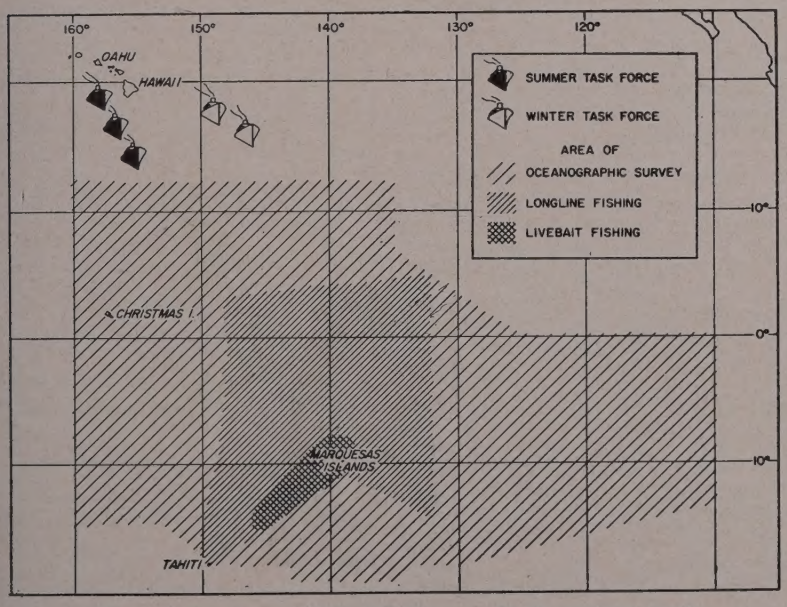

Figure 3—Survey area: POFI 1956-57 cruises to the southeast Pacific.

Freedom of the Seas For U. S. Fishing

Assistant Secretary Ross Leffler, Department of the Interior, in his speech at the recent convention of the National Fisheries Institute, plainly stated the policy of the Eisenhower Administration on the freedom of the seas for fishing vessels of the United States. He concluded:

"Opinion is strongly divided among various factions within the fishing industry insofar as such subjects as tariffs, quotas, open markets and many closely related subjects are concerned. If we are to benefit from certain phases of international trade, we must also expect to face the competition from international trade. We are operating in an international economy. Our business happens to be fish business and the fish business happens to be one that many new and enterprising countries must depend upon to sustain their freedom and independence and the same principles which we so strongly treasure. The policy of the Eisenhower Administration is to promote, foster, and encourage international exchange of trade and to strengthen the economy of all freedom-seeking nations. I'm not afraid of honest competition and I don't believe you are either.

"There is, however, one aspect of this international fishing scene which I would like to define a little more clearly to you. That is, my feelings with respect to the fishing rights of United States nationals. I believe in freedom of the seas. If we are to have the open markets which I referred to, we must, at least, have the right of our nationals to fish without disturbance in those waters that have traditionally been fished by enterprising United States fishermen. We are sharing our market—the richest market in this world—and we have every right to have our fishermen work the waters that have traditionally been available to them.

"Added to the internal and external problems we have had and probably always will have, such as the competition between the forms of gear, conflicts between sporting and commercial interests and the occasional catastrophic disappearance of a fish from natural causes, can now be listed another formidable challenge, the competition for fishing space between nations. These last few years have seen many knotty problems arise in this field and the future forbodes many more. We must not only preserve the resource, preserve the fishing efforts and the fishing areas, but we must protect the right of the United States fishermen to use those resources in those areas."

Ocean Instrument Stations Record Pacific Data

An important step toward "push-button" oceanography has been announced by the University of California's Scripps Institution of Oceanography.

Writing in a recent issue of "Science," John D. Isaacs, associate professor of oceanography, and two of his co-workers describe a method of mooring untended instrument stations in waters as deep as two and one-half miles. Sixteen such stations were established in the Pacific and operated for four months, automatically collecting and recording information.

Previously such stations have been used only in much shallower water. The advantage of the technique is that it gives simultaneous observations over a large area at a minimum expense. To have collected so much data under earlier conditions would have required the services of 16 such oceanographic vessels as the Scripps Institution's *Horizon*. There are scarcely 16 such vessels in operation in the world today.

The instrument stations carried recorders, vertical instrument strings, power supply, lights, and radar targets. They were attached to a float located well below the surface and thus away from the zone of most intense wave action. This float was attached by a special wire to an anchor on the bottom.

Electronic Call Devices for Waterfowl

The use of electronic waterfowl-calling devices, which are reported to be devastatingly effective in luring birds within gun range, is being studied by the Fish and Wildlife Service with a view toward recommending possible ban or control measures.

The type of call which prompted the discussion is a recording of the sounds of flocks of geese feeding. The new call differs from other recorded or taped calls in its realistic reproduction of the many sounds made by geese on the feeding grounds. The effectiveness of this type of call is so great that extended use of the device could threaten the preservation of the species.

The deadliness of the use of modern electronic devices involving tape recorders, record players, amplifiers and speakers to attract the geese is emphasized by reports from a number of east coast hunting areas where they were employed last fall.

Life at the Bottom

Great Ocean Deeps Studied

Recent research has shown that the fundamental processes of life go on in the deepest parts of the ocean, where pressures reach 17,000 pounds per square inch, the temperature hovers just above freezing, and the light of the sun never pentetrates.

No more than a decade ago, says Claude E. ZoBell, professor of marine microbiology, University of California's Scripps Institution of Oceanography, some scientists believed that life could not exist under these conditions, particularly since it was thought that there was no food or free oxygen at great depths.

But painstaking exploration of the great deeps of the Pacific has shown that animal life exists there in many forms, ZoBell says. Circulating water masses appear to provide food and fresh oxygen.

ZoBell says that estimates indicate a minimum of about 10 pounds of organic carbon exists per acre on the deep-sea floor. He emphasizes the scarcity of information on the region, however. "Our knowledge of animal life on the deep-sea floor having an area greater than Africa is based upon fewer than 100 grab samples fished from depths exceeding four miles."

ZoBell was aboard the Danish research vessel Galathea during her around-the-world trip in the early 1950's. The party spent several weeks studying the great deeps of the western Pacific.

Although many specimens were collected, the only creatures brought up alive were bacteria. These were shipped to the Scripps Institution in specially designed gear, refrigerated and compressed to 15,000 pounds per square inch. Descendants of these deep-sea bacteria are alive in ZoBell's laboratories today. He and his colleague are studying reactions of the bacteria to varying conditions of temperature, pressure, and chemical environment. Gear has been designed to reproduce the conditions of the deep-sea habitat.

Migratory Bird Conservation

Steps have been taken by the Migratory Bird Conservation Commission to add approximately 10,500 acres to the national wildlife refuge system, Assistant Secretary of the Interior Ross L. Leffler announced. Authorization was given for the purchase of 6,127 acres and for leasing 4,340 acres.

The largest addition will be to the Salton Sea National Wildlife Refuge in California where the leasing of 3,540 acres was approved.

The largest purchase authorization was at Monte Vista, Colorado, which is scheduled to get 2,582 additional acres. A total of 855 acres will be acquired for Malheur Refuge in Oregon. This authorization represents two of the three remaining private tracts in the bed of old Lake Malheur.

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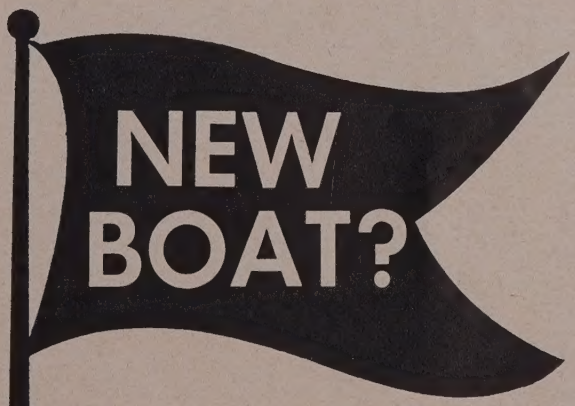

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PROGRESS & PRODUCTION

Nautical Chart

The third edition of nautical chart 5148 covering San Pedro Bay, California, has just been published; it provides large-scale coverage of San Pedro Bay from Point Fermin in the west, to Anaheim Bay in the east. On the shores of the bay are the city of Long Beach and the port areas of the city of Los Angeles.

The offshore water areas are overprinted with blue tint carried to the 3-fathom curve. Outside the 3-fathom curve, depth curves are shown at 5, 10 and 20-fathom depths.

The second edition of this chart was published in July, 1945, and revised in 1956. The present edition shows the results of extensive dredging and development of waterfront facilities at Alamitos Bay and Anaheim Bay. The new edition also includes the new Alamitos Bay Marina constructed by the city of Long Beach.

Los Angeles Harbor in which development was begun in 1909 and is considered to be one of the best along the Pacific Coast, has extensive traffic, both foreign and domestic, and ample modern port facilities for the largest vessels.

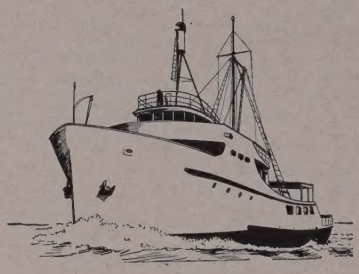
Copies of the chart are distributed by the sales agents, district offices, and the Washington office of the Coast and Geodetic Survey. Price $1.00 per copy.

New F.C.C. Safety Rules

The Federal Communications Commission in their Bulletin No. 1007h describes important safety rules. A recent requirement is that any new radiotelephone installation made on vessels carrying more than six passengers for hire and operating in the open sea or on any tidewater, must have a transmitter capable of at least 25 watts output.

In addition, periodic inspection of the radio equipment must be made and accepted by the Commission once every 24 months. Operators also are required to pass requirements of a higher grade of operator's license.

Radiotelephones especially designed to meet these new power requirements are available from Pacific Division, Bendix Aviation Corporation, North Hollywood, California.



"Anchors and Anchoring"

In the two and a half years since its first edition rolled off the presses, more than 100,000 copies of *Anchors and Anchoring* have been distributed free.

Written by R. D. Ogg, president of Danforth Anchors, and R. S. Danforth, founder and inventor, the 16-page, two color booklet presents a comprehensive survey of anchor history, testing, problems and recommendations.

Revisions, incorporating the latest information and data, have been made in each printing and will continue to be made in the future, thus insuring that no portion of the book becomes obsolete. For your free copy of the book, write to Danforth Anchors, Allston Way, Berkeley 4, Calif.

Japanese Fishing Off Brazil

One of the largest Japanese fishing companies is sending five vessels to Brazil for fishing in Atlantic waters. The fleet will consist of four trawlers of about 100 tons each and one purse-seiner of 190 tons. Approximately 100 fishermen and crewmen will go to Brazil for the operation and a number of Brazilian trainees will be trained on the Japanese vessels.

This is an exploratory venture and the Brazilian Government has granted permission for two years. If the operation shows that commercially-profitable fishing can be carried on, the Japanese company hopes to conclude an agreement whereby a joint Brazilian-Japanese fishing company will be formed. If this comes about, the Japanese firm will participate financially in the building of freezing and processing installations, probably in the Santos area.

VHF Radio-Telephone for Water Taxi Communication

Today, with the increased water taxi activity forced on fishing fleets and others, communications between boats and home base have become a necessity. This new, low power, VHF radio-telephone promises to ease this situation.

Designated the IMP, this new unit permits communications between companies and launches which is not legal on standard marine frequencies. Under this direct control, efficiency of the launch is greatly increased because it may be sent from boat to boat during heavy traffic activity, or may be dispatched to any area in case of emergency. It can serve as a base transmitter, mobile unit, or public address system.

Easily installed, small in size, and available in three different models. Licensing is easily obtained. Write Kaar Engineering Corp., P.O. Box 1320, Palo Alto, California.

"Off" for Insect Pests

A new insect repellent claimed to be twice as long-lasting as anything now in use is being marketed by the makers of Johnson's Wax.

Called "Off" the repellent is the result of a five-year research project by the U.S. Department of Agriculture in cooperation with the Department of the Army.

According to the USDA, the formula can be safely applied to the skin or clothing, except rayon or dynel, and successfully protects the wearer against mosquitoes, biting flies, chiggers, ticks and fleas.

"Off" comes in a 5-oz. pressurized spray container, and the liquid form comes in a 1½-6z. cosmetic-type bottle. It is being sold in most stores.

Survey Recorder

New light-weight portable hydrographic survey recorder, developed and manufactured by Bludworth Marine, includes the latest electronic improvements and features greatest flexibility and precision. This new Model ES-130, weighing less than 40 lbs., has a depth range to 245 feet with four scale ranges of 65 feet each. Bludworth Marine Div., Kearfott Co., Inc., 1500 Maine Ave., Clifton, N. J.

TIDES OF THE INDUSTRY

Hearings on Fishermen's Protective Act

Senator Warren G. Magnuson, Chairman of the Senate Committee on Interstate and Foreign Commerce, has announced he will schedule public hearings on S. 1483, a bill now before Congress to afford American flag-fishing vessels and crew members protective insurance for payment of losses sustained and injuries to fishermen caused by illegal acts of foreign nations while on the high seas. Fishermen of both Coasts and the Gulf area have petitioned the Committee to hold public hearings on this bill.

The House Subcommittee on Fisheries and Wildlife recently held hearings on H.R. 5526, almost identical to the Magnuson bill to amend the Fishermen's Protective Act of 1954.

The Senate Committee had expected to act upon the testimony presented at the House hearings. However, to date the House Committee has not reported the bill nor published a report of the hearing.

British Campaign to Boost Fish Sales

A campaign of $840,000 by the British Trawlers' Federation and other sections of the fish trade to make Tuesday a second popular fish day of the week have been announced.

Responsible people in the trade have said if people could be encouraged to eat fish two days a week instead of one, the industry's problems would diminish. They have decided that the time is ripe to face up to the issue.

Posters and slogans, press and television campaigns and color magazine advertisements are planned to boost the idea of bringing Tuesday into line with Friday as an accepted fish day.

California Sardine Season Opens Earlier

A bill signed by the Governor of California on June 4, 1957, advances the opening of the Southern California commercial sardine season from October 1 to September 1. The new opening date is effective immediately. Now the Southern California sardine season will run from September 1 to December 31. Formerly it lasted from October 1 to February 1.

The Northern California sardine season will now run from August 1 to December 15. The earlier season is predicted to enable bigger sardine catches because fishermen in the past few years have reported sighting large schools of sardines off San Pedro during September when in past seasons the closed season was in effect. Sardine landings have steadily declined during the past few years.

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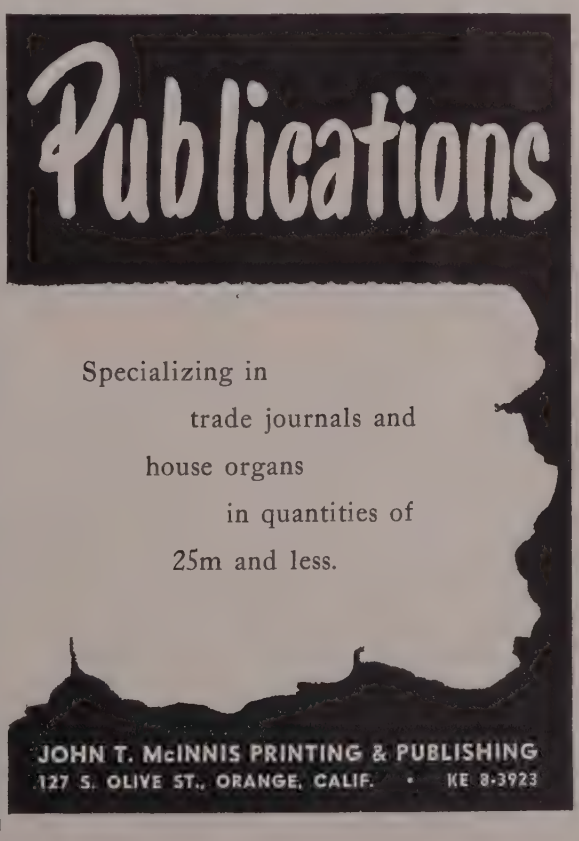

Commercial Fishing In Washington State

By DR. JAMES CRUTCHFIELD
University of Washington
Department of Economics

Production of seafood in Washington state in 1955 amounted to 145,007,351 pounds of fish and shellfish, with a total wholesale value of $39,794,586. In addition, processing and marketing services of Washington firms added $3,249,392 to the value of imported fish. $20,064,616 of total wholesale receipts was received by fishermen and shellfish growers, $7,234,159 was disbursed as wages by processors and wholesalers. Handlers of fish paid $774,787 in taxes (excluding income taxes) and $10,687,237 in other expenses.

Salmon remained the major item in the state's fishing industry, with a total value to fishermen of $11,805,170 and a wholesale value of $21,005,908. This reflects, of course, the usual large odd-year catch of pink salmon. Oysters, halibut, and the bottomfish catch were next in order, producing wholesale values of $6,022,942, $3,443,031 and $3,431,492, respectively. All other fish, shellfish and livers landed in the state were valued at $3,033,748. By-products were also a major factor, contributing a wholesale value of $2,856,965.

A survey of capital investment in the fishing industry of the state showed a total of $63,792,203. The current value of fishing vessels and gear was estimated at $31,408,698. Plants, equipment, and average inventories of processing and wholesale marketing firms accounted for $23,215,605 and the state's oyster lands were valued at $9,167,900.

The activities of the fishing industry as a whole contributed a net addition of $34,651,226 to incomes of state residents, exclusive of the important secondary effects on related industries. At current prices this indicates a capitalized value of the industry of approximately $693,025,000 after adjustments for normal cyclical variations in production of pink salmon.

Since products of Washington's fishing industry are largely shipped out of the state, the industry provides a substantial inflow of money payments to Washington residents. While no precise estimate of the secondary effects of this inflow is possible, other studies in this field suggest that every worker in an "export industry" provides at least one additional job in secondary industries.

Fisheries of the U.S. and Alaska, 1956

Above is the title of Fishery Leaflet No. 393, recently issued by the FWS Branch of Commercial Fisheries. According to this leaflet, a record 5.2 billion pounds of fish and shellfish was taken by United States and Alaskan fishermen in 1956—a gain of 8% compared with the previous year. It is estimated that the 1956 catch had an ex-vessel value of about $363 million — about $27 million more than the previous year.

The record 1956 catch resulted from the largest menhaden production in the history of the fishery, and sharp increases in catches of tuna, Alaska and Maine herring, jack and Pacific mackerel, and industrial fish in New England. Small gains occurred in salmon, haddock, Pacific halibut, and anchovies while smaller catches were made of shrimp, Pacific sardines, and whiting.

Fishery Leaflet 393 points out that the commercial fishing industry was responsible for the employment of an estimated 300,000 workers in allied industry such as gear manufacture, making processing machinery and boat construction; the employment of 101,000 shore workers in 4,024 shore establishments including processing plants and some wholesale units but not retailers; and the employment of 3,300 workers using 1,350 boats to transport fish from area of capture to handling and processing plants

The consuming public's response to this activity was to eat an average of 10.1 pounds (edible weight) of fish per person during the year; of this 5.7 pounds were fresh and frozen fish, 3.8 pounds were the canned product and .6 of a pound was cured. In 1955 the consumption was 10.2 per capita.

World Markets for U.S. Fishery Products

Foreign markets bought less fishery products from the United States in 1956 than during the previous year, but this trade was still substantially larger than in 1950. Further liberalization in the trade restrictions applied by certain countries to fishery products from the United States was evident. Restrictions applied by countries in balance-of-payments difficulties have severely limited exports of fishery products since 1948. The United States fishery industries depend on foreign market outlets for many products.

More than 325 million pounds of edible and industrial fishery products, including fish oils and shell products, were shipped to foreign countries during 1956, according to a review of the United States fishery export trade made by the Bureau of Commercial Fisheries. These products were valued at $38.5 million. During 1955, 336 million pounds were exported, valued at nearly $40.0 million. The 1950 export trade totaled 264 million pounds, valued at $27.4 million.

The decline in the 1956 trade was due for the most part to reduced exports of canned fish, particularly canned salmon and sardines. Fish oil and unmanufactured shell exports also declined slightly, but the export value for these products showed an increase over 1955 because of higher prices.

Canada in recent years has been the leading export market from the standpoint of total value of trade. The total value of United States shipments of fishery products to that country declined by $2 million during 1956, as compared with $10 million in 1955. In 1950 those exports were valued at only $3 million. As a result both Canada and the Philippines each received about $8 million of United States exports in 1956. The value of canned sardine, salmon, and fish oil exports to Canada in 1956 declined, but the value of exports of fresh and frozen fish, oysters, shrimp, and clams increased over 1955. The value of exports of canned shrimp, canned oysters, fur-seal skins, and oyster shells for feed also increased.

The Philippines took products valued at slightly over $8 million, largely canned California sardines valued at $4 million and canned California anchovies valued at about $2.5 million. Canned squid was another important export to the Philippines in 1956 with this trade valued at about $1 million. Trade with the Philippines was valued at $8.6 million during 1955 and $6.4 million in 1950. In 1950, the trade was principally in canned sardines.

West Germany, the principal market for United States fish oils, took directly products valued at $6.1 million during 1956, and is believed to be the ultimate destination for a large part of the exports of fish oils to the Netherlands, value $4.4 million.

ALBACORE ABUNDANT ON WEST COAST

It would probably be foolish to attempt to predict the size of the West Coast's 1957 albacore tuna catch at this time, before the start of the regular fishing season, but this much can be said—large numbers of 12 to 20-pound albacore are present not too far off the shores of California and Oregon.

The U.S. Fish and Wildlife Service research vessel *John R. Manning*, operated by the Pacific Oceanic Fishery Investigations of Honolulu, has taken 195 albacore during the past five days by gillnet and troll fishing in a region centering about 700 miles west of Eureka, California. The best day saw 97 of the valuable white-meat tuna come on board, according to Garth I. Murphy, acting director, POFI.

The *Manning* is conducting a general reconnaissance preliminary to Operation NEPAS (Northeastern Pacific Albacore Survey), which is scheduled to begin July 22. During this survey nine chartered commercial vessels will search for albacore along pre-determined tracks from the coast to 350 miles offshore. The tracks are evenly spaced from central Washington to central California. Reinforcing these vessels will be the research ships *Manning*, concentrating on albacore, and the *Hugh M. Smith*, concentrating on hydrography.

The objective of the survey is to define precisely the distribution of albacore off the coast in mid-summer, and even more important, to learn the conditions in the ocean that govern their distribution. This knowledge will be a long step towards placing the Pacific Coast albacore fishery on a rational basis, as opposed to the hit or miss situation prevailing now.

Scientists of POFI, as well as those of the other agencies united in the Albacore Steering Committee under the sponsorship of the Pacific Marine Fisheries Commission, have hypothesized that albacore fisheries fluctuate chiefly because conditions in the ocean that control their distribution change. Thus, a good year might result when the ocean brings albacore close to shore, where they are easily found. A poor year might simply mean that ocean conditions hold the fish 300 to 400 miles offshore—too far off to be discovered by chance.

Once the situation is understood, scientists think there is a good chance of predicting when and where albacore can be found, thus eliminating disappointment and waste through fruitless scouting.

FAWS TASK FORCE IN THE MARQUESAS

(Continued from page 7)

California, and averages about 3½ inches in length. Also, there is a species of goatfish, slightly larger.

Q. How does the bait behave?

A. The sardines school up and return to the boat when thrown as bait. The goatfish are unsuitable for bait because they scatter and dive.

Q. How much bait was seen?

A: A large supply of sardines was observed in some of the bays. Surveys for bait were made in 16 days of the Marquesas, and varying quantities of sardines were found in 12 of them. Typically, sardines were seen during daylight hours in shallow water over sandy bottom. Six of the most productive baiting localities are listed as follows:

1. Taio Hae Bay, Nuku Hiva I. Most reliable bait source. 1,200 scoops seen, 1-24-57. Good protection from weather and short tow to vessel.

2. Anaho Bay, Nuku Hiva I. 5,000 scoops seen, 1-31-57; 500 buckets caught. Bad surge in NE weather.

3. Taipi Vai, Nuku Hiva I. 100 scoops caught, 2-4-57. No general survey made. Good protection from weather, but long tow to vessel.

4. Haka Ehu, Nuku Hiva I. 130 scoops caught. 3-5-57. No general survey made. Bad surge in NE weather.

5. Taa Huku Bay, Hiva Oa I. 40 scoops caught, 1-27-57. None seen, 2-27-57. Good protection from weather.

6. Hatiheu Bay, Nuku Hiva I. 50 scoops caught, 2-8-57. Bad surge in NE weather.

Sardines of all sizes were attracted to a light at night. It was found that more were attracted to the vessel by the diffused light of a floodlight, than by intense light from a single bulb. Seven sets were made with a night net, and catches ranged from 4 to 130 scoops of sardines per set, with the average catch 44 scoops.

Q. Did the sardines survive well in the tanks?

A. Extremely careful handling was required, or a large percentage would die within 12 hours after being placed in the wells. Once settled, they milled well. When properly cared for, they survived for an extended period in the wells.

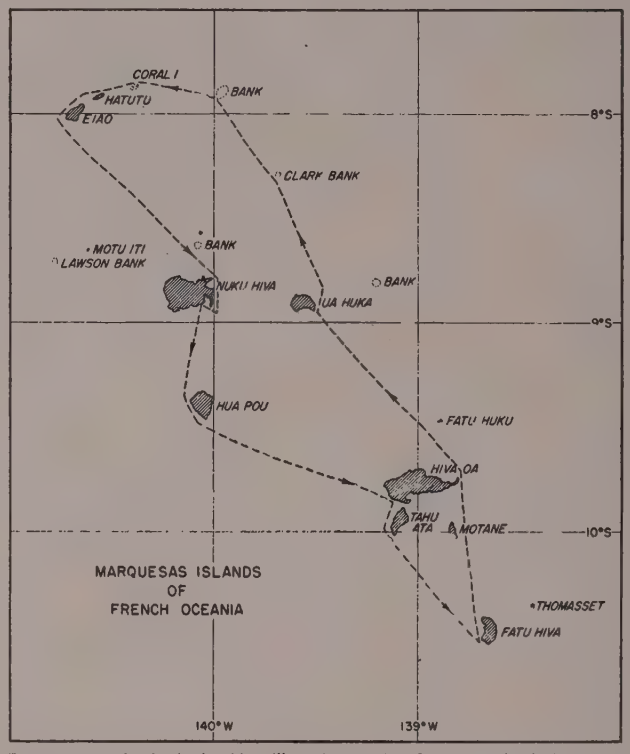

Figure 4—Track of Charles H. Gilbert in scouting for tuna schools for each of three periods including (1) September 7-15, 1956, (2) January 25-30, 1957, and (3) February 23-March 1, 1957.

Q. What did the oceanographic surveys reveal?

A. The currents in the general region of the Marquesas and the Tuamotus were setting onto the islands from the southeast during the winter survey. Those observations which tell us about the potential tuna forage in the area indicated that the waters downstream from the islands were relatively rich. Analysis of the data from the summer survey are not yet completed.

Q. What about the deep-swimming tuna?

A. Some good catches of large yellowfin (7-8 per hundred hooks) were made in the immediate vicinity of the Marquesas during the summer cruise. Longline catches in the rest of the survey area were small, both in summer and winter.

Q. Do you plan additional surveys in the Marquesas?

A: Yes. We plan to return to the Marquesas in order to study in greater detail the extent of the season of greatest availability of surface schools of tuna, and to learn more about their behavior. *

Alaska Fishery Act

The management of the salmon fisheries of Alaska would be strengthened by the enactment of legislation proposed by the Department of the Interior, Assistant Secretary of the Interior Ross L. Leffler announced.

The new bill contains minor amendments to the White Act of June 6, 1924, the basic fishery law for the conservation of the commercial fisheries of Alaska.

Of the four items recommended for change, two would give the Fish and Wildlife Service of the Department of the Interior greater flexibility of control in managing the salmon resource in the Territory, one would increase restrictions to prevent unwarranted damage to the fishery, and the fourth would facilitate the enforcement of the laws and regulations.

MANY FISH TAGGED AROUND HAWAII

An intensive effort to release many tagged skipjack (aku) in Hawaiian waters has been announced by Acting Director Garth I. Murphy of the Pacific Oceanic Fishery Investigations.

The research vessel *John R. Manning* and *Charles H. Gilbert*, in three weeks of round-the-clock baiting and fishing operations, marked and released about 2,000 of the striped tuna which support Hawaii's only major fish processing industry. Fishermen are asked to be on the lookout for these tagged aku and to report any recaptures. Recoveries of the marked fish are expected to be of great value in explaining the little-known seasonal migrations of this species in Hawaiian waters.

The most probable explanation of the seasonal appearance of large numbers of 18-22 pound aku is a movement of these fish into Hawaiian waters from some more distant area. Skipjack (aku) tagged a considerable distance offshore and later recaptured by commercial fishermen will reveal at least a part of the path followed by the schools in their migrations. Previous attempts to carry out this work have been hampered by lack of a suitable tag.

The tag used is of a new type, developed at the POFI laboratory and being used on a large scale for the first time. It consists of a barbed spear head of clear plastic attached to a 3-inch piece of red or blue plastic tubing, the flattened end of which bears a serial number. In applying the tag, the barbed end is simply jabbed into the back muscles of the tuna and the tubing is left protruding from the wound. This speed and ease of application are important for skipjack struggle hard and die quickly when taken from the water.

Skipjack fishermen in Hawaii customarily "wing" their fish, that is, they raise the bamboo fishing pole with the right arm and as the tuna, which may weigh nearly 30 pounds, swings in toward them, they receive it under the left arm and hold it tightly while they remove the hook. This affords a perfect opportunity for applying the dart-type tag and makes it possible to drop the marked fish back into the sea without their ever having touched the deck. Recaptures of fish marked in earlier small-scale experimental taggings with the dart tag have indicated that the tagging wound heals readily, anchoring the barb securely in the tissues of the fish.

Cruise Report of the John N. Cobb

Successful trials with a new electrical depth-telemeter for midwater trawls highlighted cruise No. 31 of the FWS exploratory fishing vessel *John N. Cobb*. The vessel returned to Seattle on June 21 after completing almost two months of midwater trawling experiments off the coasts of Washington and British Columbia.

During the last three weeks, the acoustic depth-telemeter was replaced by the new electrical device, which operated accurately after several minor failures were remedied. The electrical telemeter, about the size of an orange, was attached just ahead of one of the trawl doors. Accurate depth of the gear was determined continuously by signals transmitted to the vessel through a new electrical-conductor-core trawl cable. A meter mounted in the wheelhouse next to the echo sounders and Sea Scanar automatically converted the electrical-resistance impulses to depth readings in feet and fathoms. It was thus possible for the captain to keep the net at any desired depth either by varying the speed of the vessel or the amount of cable out.

Quality Standards for Breaded Shrimp

Quality standards for frozen raw breaded shrimp may be in the offing for the American consumer, as a result of the Department of Interior's cooperative efforts with the breaded shrimp industry, the National Fisheries Institute, and the Department of Agriculture.

A 60-day trial period is now in effect to give processors, buyers, distributors, and other interested parties an opportunity to try out the standards and to send their observations to the Department of Agriculture which has the legal responsibility for promulgating such standards. If there is substantial agreement on the proposed standards, a notice of final rule making will be published at the end of the 60-day period.

Fish Package Best in Metal Cans

Fish frozen and stored in evacuated metal cans keep far better than in any other packaging material, it has been found after extensive research by the Pacific Coast and Alaska branch of the U.S. Fish and Wildlife Service, Continental Can Company and leading sea food packers. Not only can it be stored successfully for longer periods, but it tastes fresher and looks better when thawed and cooked. When they try frozen fish packed in cans, people in parts of the country with no access to fresh fish should get a new idea about how good fish can taste, declares R. G. Landgraf, Jr., Package Service Division, Continental Can Company.

From the packer's point of view, the can offers the additional advantage that it is easily adaptable to a high-speed production line which may already exist in cases where the same product suits both canning and freezing. It would only be necessary to substitute a freezing operation for the retort, and all steps like filling and sealing could be done with the same equipment.

Experiments indicate that these advantages of packing in tin apply equally to fish and sea foods. The Fish and Wildlife Service tests were carried out with albacore tuna, silver smelt, Columbia River smelt, English sole, surf perch, Dolly Varden trout, steelhead trout, true cod, herring, pilchard, orange rockfish, sablefish, pink salmon, chum salmon, silver salmon, Pacific oysters, dungeness crab, king crab and tanner crab. For all 19 varieties of fish included, the canned product kept in cold storage in better condition than the same fish packed any other way.

FWS Fishery Research

Seventeen contracts for research, biological investigations, and economic studies have been awarded by the Fish and Wildlife Service within the last month, reports Secretary of the Interior Fred A. Seaton.

The projects are part of the continuing programs conducted by the Department's Fish and Wildlife Service to assure a sustained supply of fish and to provide for better utilization of fish and fishery products, the Secretary explained. Money for these contracts was provided through the Saltonstall-Kennedy Act which makes available a portion of foreign fisheries import duties to carry out research on means of strengthening the American fishing industry.

Appointments Made

Fisheries Advisory Committee

Secretary of the Interior Fred A. Seaton announced that letters of appointment to varying terms of office in the American Fisheries Advisory Committee were mailed to 19 members of all segments of the American fishing industry.

This Advisory Committee was authorized by the Saltonstall-Kennedy Act of 1954 which was passed by the Congress "to promote the free flow of domestically produced fishery products in commerce." The Act was due to expire on June 30, 1957, which would have automatically terminated the Committee.

With the passage of the Fish and Wildlife Act of 1956 which, among other things, made the Saltonstall-Kennedy Act permanent, the Department of the Interior has now established a new committee using a staggered-term system which will retire one-third of the committee each year.

Former West Coast members reappointed and their terms of offices are as follows:

For one year: Donald P. Loker, Vice Pres., Star-Kist Foods, Inc., Terminal Island, Calif.; Lawrence Calvert, Pres., San Juan Fishing and Packing Company, Seattle 14, Wash.

For two years: Thomas F. Sandoz, Pres., Columbia River Packers Assn., Astoria, Oregon.

For three years: Arthur H. Mendonca, Pres., F. E. Booth, Inc., San Francisco, Calif.; Chris Dahl, Kayler-Dahl Fish Company, Petersburg, Alaska.

Mason Case, New Member

New West Coast member for a two-year term of office is Mason Case, Manager, Fishermen's Coop. Assn. of San Pedro, San Pedro, Calif.

"The American Fisheries Advisory Committee has rendered invaluable service to this Department in carrying out its responsibilities under the law," Secretary Seaton said, "and with these new appointments the Department will continue to benefit from the advice available from people with long experience in the commercial fishing industry."

The American Fisheries Advisory Committee has so far held five meetings. The next meeting will be held in Ketchikan and Juneau, Alaska, July 22-25. Assistant Secretary of the Interior for Fish and Wildlife Ross Leffler is Chairman of the Committee and will preside at the Alaska meeting.

The law makes available to the Secretary of the Interior each fiscal year an amount equal to 30% of the gross receipts from customs duties collected on imported fishery products for the conduct of various types of fishery research and services to develop and increase markets for fishery products of domestic origin. With these funds the Bureau of Commercial Fisheries conducts a broad program designed to aid the American fishing industry.

Radio-Activity May Affect Fisheries

The disposal of radio-active wastes in the seas and oceans, which is of much concern to world fisheries, poses problems which oceanographers, biologists and other scientists are now trying to solve.

"These problems are serious," stated Dr. D. B. Finn, Director of Fisheries Division, Food and Agriculture Organization, Rome (in an interview recently with our special correspondent), "although at present the danger is potential rather than actual. But it is necessary to have the fullest international collaboration now to acquire knowledge and experience on how and where to dispose the radio-active wastes so that when the time comes we can be sure of the safe disposal of great quantities."

At present only Canada, Russia, the United Kingdom and the United States of America are actually disposing of a substantial quantity of radio-active wastes, but it will not be long before other nations will be doing the same. But this is only the beginning of the problem, as uranium and atomic energy may later on replace coal and oil in generating power for much industrial usage.

Studies on the Chemical Composition of Fish

The several technological laboratories of the U.S. Fish and Wildlife Service have underway a continuing project to analyze salt and fresh water fish for the purpose of gaining more information about the complex composition of fish in such fields as nutrition, processing, and use of waste materials. This knowledge has been sought for many years, but a great deal remains to be learned as to the composition of the 160 edible species of fish and shellfish marketed in the United States.

Recently, at the Seattle laboratory, determinations have been made to compare the compositions of different parts of fish flesh. Twelve species of fish, caught commercially along the Pacific Coast, were carefully cleaned and the following portions were separated: light meat, dark meat, belly flap, dorsal (strip along back of fish), and waste. A number of interesting results were obtained from these analyses. Oil distribution in the flesh, in order of decreasing amounts, was in the dorsal, dark meat, belly flap, and light meat. Dorsal flesh from several species contained 11 times more oil than light meat from the same species. Light meat, however, had the highest protein content and dorsal flesh the lowest, even lower than the waste material.

School Lunch Survey

What children are eating, how much, and what it costs, is now being studied by the U.S. Department of Agriculture in a survey of school lunch programs in several parts of the country.

The fishing industry should be particularly pleased to note that fishery products rank high on the list of popular foods as far as children are concerned.

The milk and dairy products bill, including a nominal amount for evaporated milk and cottage cheese, took 32% of the total spent. The protein foods—meat, *fish* and poultry products—accounted for another 23% of the total. Hamburgers and frankfurters led the list, with eggs, *frozen fish* and *fish sticks* next. Chicken and turkey came last.

Vegetables were next in line, with 14½% of the moneys spent. Fruits took about 5½% of the total.

Over 280,000 pounds of bread and rolls were served, and accounted for 5% of the total spent for food.

Gray Whales Go North to Bering Sea

The gray whale has headed north to its summer feeding grounds in the Bering Sea.

This whale, a scenic attraction on its journey south close to shore during the winter months, makes its northward migration virtually unnoticed—the thousands of migrants being spread over too wide an area in the Pacific and usually too far from shore to attract attention. On its way southward it travels in a relatively narrow corridor seldom more than three miles from shore.

During the last winter Fish and Wildlife observers at the La Jolla, California, station counted 1,782 of these animals migrating to their wintering grounds. In one period the whales were about five miles apart. Traveling at five miles an hour, that meant a whale on hour passed the observers.

Their wintering ground is along the coast of Lower California, and some of the whales even round the tip of the long peninsula and feed not far from the main coast of Mexico.

Once plentiful, the gray whale was harvested to the point of near extinction. Now it is protected by international agreement. Presently it is estimated there are about 4,000 adult gray whales and 500 calves, although conditions make an accurate census difficult.

Legislation for Joint Fisheries Regulations

Chairman Warren G. Magnuson (D.-Wash.) of the Senate Interstate and Foreign Commerce Committee proposed to the Senate recently that the North Pacific Fisheries Act of 1954 be amended to enable the United States, the Pacific Coast States and Canada to regulate fisheries operations on the high seas to conserve fishery resources of the North Pacific Ocean.

The measure would extend Federal authority over fishing in the North Pacific from Dixon Entrance, in Southern Alaska to the entrance of the Strait of Juan De Fuca between the State of Washington and British Columbia, Canada. It would give California, Oregon, Washington and Canada joint authority to institute more effective regulation to conserve and strengthen the ocean fishing resources in the area and coordinate the supervision of the fishing in the area.

The bill was introduced at the request of the State Department, fishermen and industry representatives on the West Coast, and will coincide with legislation enacted in Washington, Oregon and California and with similar legislation being worked out by Canada. The measure is designed to permit the control of net fishing on the high seas; uniformity of trolling seasons and troll salmon size limits and uniform protection of petrale sole during the period they congregate in compact schools for spawning and when their physical condition and market value is low.

The States and West Coast fishermen have complained that some American fishermen meet salmon runs coming into Alaskan and North Pacific waters on the high seas, thus preventing them from reaching spawning waters in streams of the Northwest. This resulted, they charged, in immature fish being netted causing damage to future runs. Department of Interior Regulations already prohibit ocean net fishing for salmon off the Alaskan coast.

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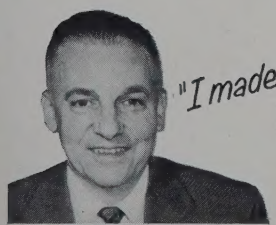
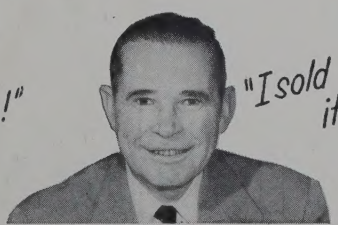


MANUFACTURER



DEALER

CUSTOMER

"I'm always satisfied most with a Brand that's made a Name for itself!"

BRAND NAMES FOUNDATION, INC. • 437 FIFTH AVENUE, NEW YORK 16, N. Y.

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Library, Pacific Oceanic Fishery Investigations
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Honolulu, T. H.
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A BIGGER AND BETTER FISHERY MARKET

MOST fishery interests agree that things are looking up for the future. Some of our most troublesome problems are being recognized and helpful solutions searched out—by both business and government authorities. You can read about them on other pages in this magazine.

With the American economy in general on a high level, and most lines of business apparently destined to remain that way, we believe that the fisheries situation also will shape up quite satisfactorily in the days ahead.

Our efforts now and always are dedicated to the creation of bigger and better markets for canned tuna, and to advance the best interests of the entire tuna industry.

CALIFORNIA FISH CANNERS ASSOCIATION INC.

Breast-O'-Chicken Tuna, Inc. · California Marine Curing & Packing Co.

Coast Fisheries (Division of the Quaker Oats Company)

Franco-Italian Packing Company, Inc.

Pan-Pacific Fisheries, Inc. · South Coast Fisheries, Inc.

Star-Kist Foods, Inc. · Sun Harbor Packing Company

Chicken-of-the-Sea, Inc.

West Coast Packing Corporation · Western Canners Company